

Amend

of the first and second substrates to the deposition chamber and during deposition of the nickel layer.

7. (Amended) The method according to claim 8, wherein each substrate comprises silicon and the deposited nickel layer is heated to form a nickel silicide layer.

8. (Amended) A method of forming nickel layers in a deposition chamber on a plurality of substrates, the deposition chamber having at least one heating element the method comprising:

X2

heating the deposition chamber with the at least one heating element prior to introduction of a first substrate;

introducing the first substrate to the deposition chamber while heating the deposition chamber with the at least one heating element;

depositing a layer of nickel on the first substrate while heating the deposition chamber with the at least one heating element;

removing the first substrate from the deposition chamber while heating the deposition chamber with the at least one heating element;

introducing a second substrate to the deposition chamber while heating the deposition chamber with the at least one heating element; and

depositing a layer of nickel on the second substrate while heating the deposition chamber with the at least one heating element, wherein

the chamber is heated with the at least one heating element continuously between the removal of the first substrate and the introduction of the second substrate.

10. (Amended) The method according to claim 8, further comprising cleaning each substrate prior to depositing the layer of nickel.

11. (Amended) The method according to claim 8, wherein the layer of nickel is formed on exposed silicon surfaces of each substrate and the method further comprising:

X3
heating the layer of nickel at a temperature of approximately 300 °C to approximately 550 °C to form a nickel silicide layer.

12. (Amended) The method according to claim 11, wherein the heating of the layer of nickel to form the nickel silicide layer is carried out for approximately 5 seconds to approximately 2 minute.

13. (Amended) The method according to claim 12, further comprising removing unreacted nickel by wet chemical etching.

14. (Amended) The method according to claim 13, wherein the removing unreacted nickel is carried by immersing each substrate in a solution of NH₄OH, H₂O₂ and water or immersing each substrate in a solution of H₂SO₄, H₂O₂ and water.

15. (Amended) The method according to claim 14, further comprising forming a conductive connection to the nickel silicide layers without using a cap layer.